Tracking & Trending

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System Safety and Safety Systems for Accelerators

US Particle Accelerator School
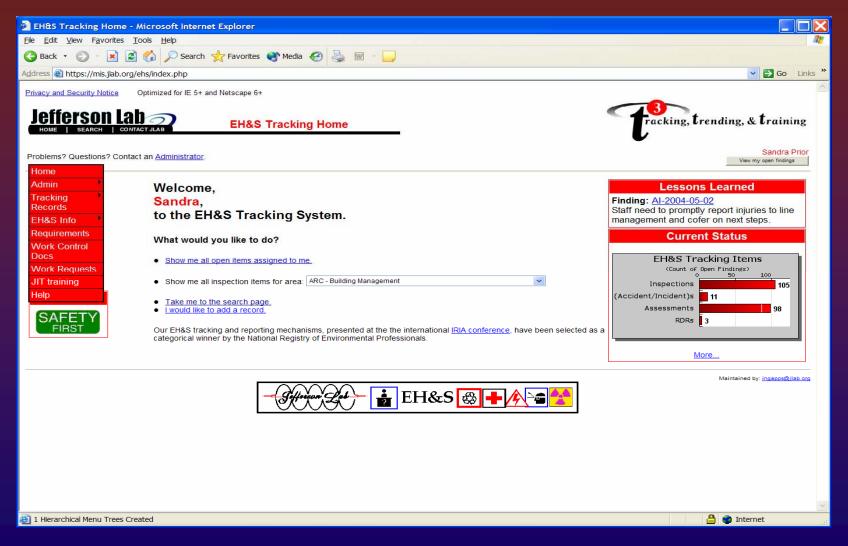
June 28 – July 2, 2004

Why Track Data?

- Good business practice
- Establishes history/audit trail for decisions and actions
- Can use data history for
  - Continuous improvement
  - Risk analysis
  - design justification
- Tracking commitments forces people to act

Cost vs Benefit

- Setting up a tracking system requires
  – Knowing what outcomes you want first
  – Resources for development
- Initial data entry can be viewed as time consuming
  – Requires disciplined, systematic approach
  – Benefits over time far outweigh intial data entry investment

Jlab EH&S Tracking System

Sources of Data

Data Source	Description	Comments
Inspections	Scheduled Internal/External	Proactive & reactive Compliance driven
Observations	Informal EHSLOG, verbal, email	Proactive ISMS Core Function 5
Accident/Injury/Occurrence	Crosses DOE/OSHA reporting threshold	Reactive
Notable Event	May be good or bad Lessons Learned	Proactive ISMS Core Function 5
Assessment	Line Self Independent	Proactive ISMS Core Function 5

Data Source: Inspections

- 4 Categories of main data sources, or "events"
  - Inspections
    - Scheduled
    - Safety Warden
    - EH&S staff observations
    - Laser Audits
    - External Agency

Data Source: Accident/Incident

❖Reportable Injuries/Illnesses

❖First Aid

❖Reportable Incidents – as defined by DOE Occurrence Reporting requirements

❖Notable Events – non reportable ocurrences

- Can be good or bad

- Focus is on Lessons Learned

Data Source: Assessments

❖ Line Self Assessments

❖ Independent Assessments

❖ EH&S Manual Revisions

Data Source: RDRs

Radiation Deviation Reports (RDR)

- Radiological events that do not cross Price Anderson Act Amendments threshold for reporting

- 3 similar events w/in 1 year rise to reportable level

    – Ex. Recent VTA ORPS report

Data Sources: Common Features

- All categories share a common set of data fields: date, location, evaluator, division, department, & responsible manager

- Each category also has unique data set

Accidents/Incidents	Inspections
ISMS Core Values	Risk Codes
Report Link	EH&S Manual Reference
Lessons Learned	
Classification	

Data Format: Events

- Two tiered approach
  - Events
    - Contains data common to a subset of related findings – the event "Header"
    - Mixture of common and unique data fields
    - Useful for periodic roll up reports that assess the numbers of inspections performed or accidents that occurred in a given timeframe
    - More efficient means of managing data

Data Format: Findings

- Two tiered approach – cont
  - Findings
    - Individual observations or causes that require some action to correct
    - May have different responsible managers, risk codes, ISMS core value, or lesson learned
    - Multiple findings may be generated from one event
- Both have unique but related record numbers using category, year, and sequence #

System Access

- Access is Intranet only

- Requires JLab user name and password

- Anyone can view data, post status updates, conduct queries and generate reports

- User privileges required to add new records, and edit, delete, or close existing records

System Access - cont

- Anyone may post an EHSLOG entry and email it at the time the entry is posted
  - Expedites notice to EH&S staff or supervisor
  - Primary route for worker observations added to tracking system
  - Also a good means of sharing information

Querying the System

- May query events or findings w/in a category or across all categories

- Cross category queries yield data from common fields only

- Event & Finding queries w/in a category yield data from all fields, common and unique

- Anyone may query the system; no password or privileges are needed

- Query results provided in HTML or MS Excel

Quick View of Your Findings

- Menu bar "View my open findings" appears on every page

- Provides quick view of open items in the system that are your responsibility to close

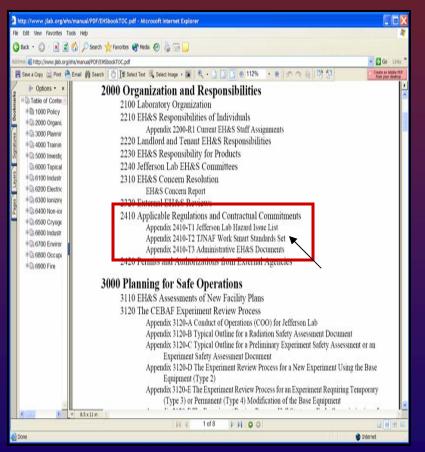- Knows who you are based upon log-in to the system
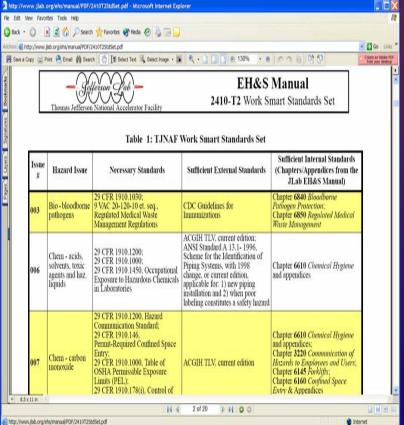
Jlab EH&S Tracking System

Menu Selection: EH&S Info

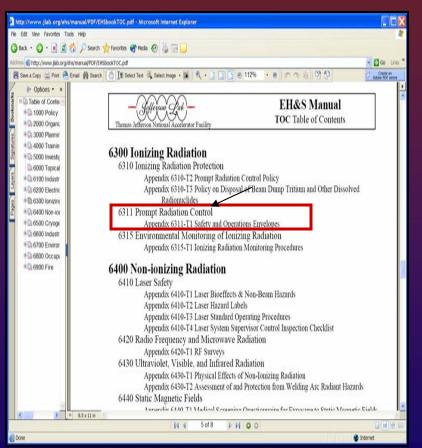# Menu Selection: EH&S Manual

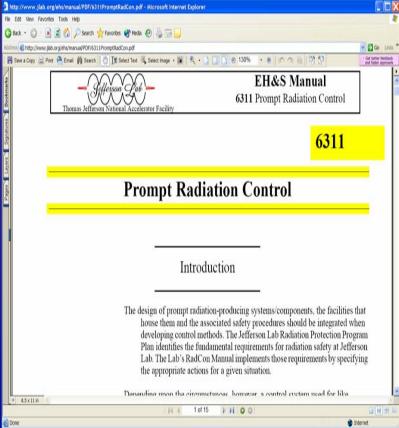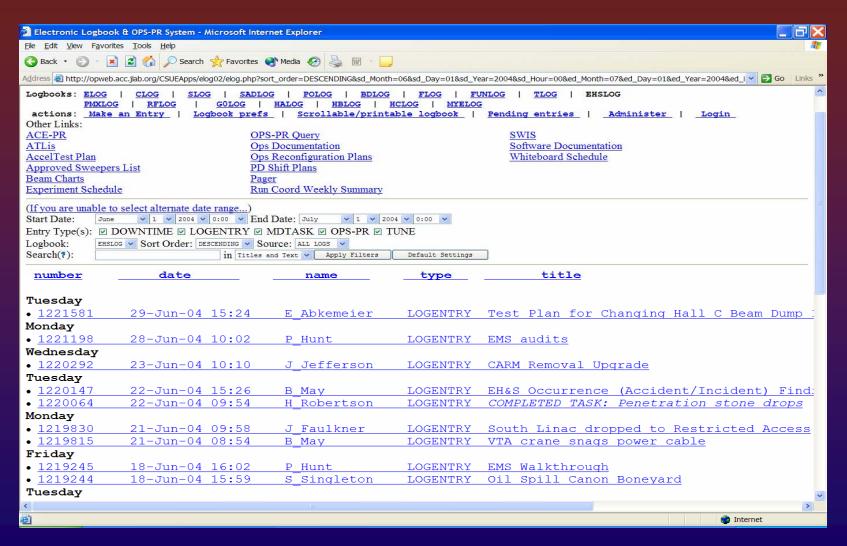# Menu Selection: EH&S Manual

Menu Selection: EH&S Manual

EH&S Electronic Logbook
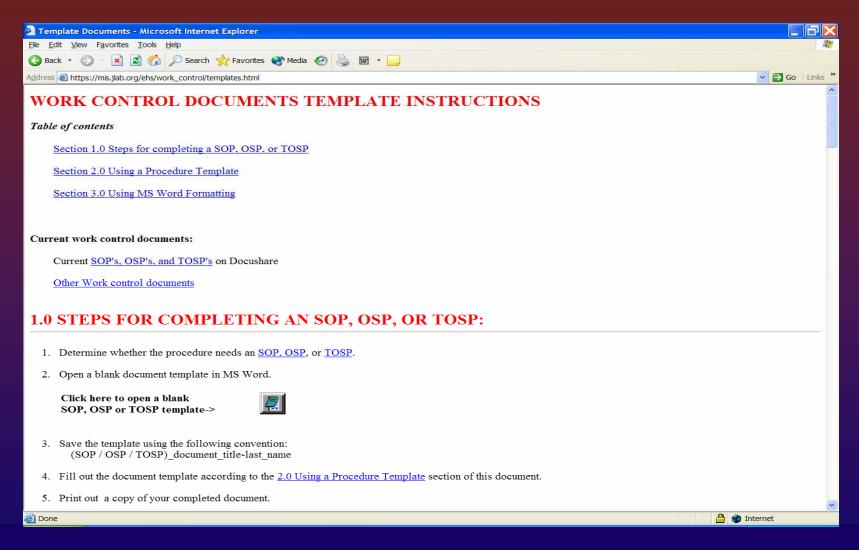
Work Control Documents

Template Documents - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back | Search Favorites Media

Address https://mis.jlab.org/ehs/work_control/templates.html Go Links
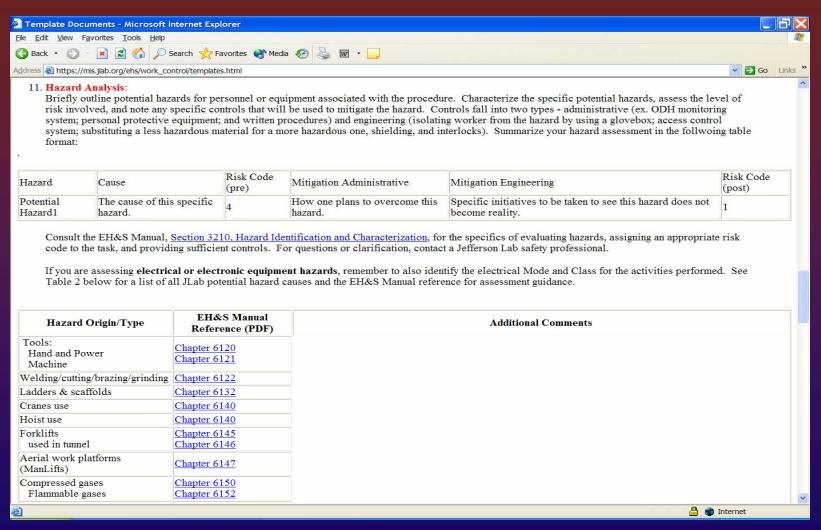
WORK CONTROL DOCUMENTS TEMPLATE INSTRUCTIONS

Table of contents

Section 1.0 Steps for completing a SOP, OSP, or TOSP

Section 2.0 Using a Procedure Template

Section 3.0 Using MS Word Formatting

Current work control documents:

Current SOP's, OSP's, and TOSP's on Docushare

Other Work control documents

1.0 STEPS FOR COMPLETING AN SOP, OSP, OR TOSP:

1. Determine whether the procedure needs an SOP, OSP, or TOSP.

2. Open a blank document template in MS Word.

   **Click here to open a blank
   SOP, OSP or TOSP template->**

3. Save the template using the following convention:
   (SOP / OSP / TOSP)_document_title-last_name

4. Fill out the document template according to the 2.0 Using a Procedure Template section of this document.

5. Print out a copy of your completed document.

Done Internet

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Work Control Document Template

WCD: Hazard ID & Mitigation

11. Hazard Analysis:
Briefly outline potential hazards for personnel or equipment associated with the procedure. Characterize the specific potential hazards, assess the level of risk involved, and note any specific controls that will be used to mitigate the hazard. Controls fall into two types - administrative (ex. ODH monitoring system; personal protective equipment; and written procedures) and engineering (isolating worker from the hazard by using a glovebox; access control system; substituting a less hazardous material for a more hazardous one, shielding, and interlocks). Summarize your hazard assessment in the follwoing table format:

Hazard	Cause	Risk Code (pre)	Mitigation Administrative	Mitigation Engineering	Risk Code (post)
Potential Hazard1	The cause of this specific hazard.	4	How one plans to overcome this hazard.	Specific initiatives to be taken to see this hazard does not become reality.	1

Consult the EH&S Manual, Section 3210, Hazard Identification and Characterization, for the specifics of evaluating hazards, assigning an appropriate risk code to the task, and providing sufficient controls. For questions or clarification, contact a Jefferson Lab safety professional.

If you are assessing **electrical or electronic equipment hazards**, remember to also identify the electrical Mode and Class for the activities performed. See Table 2 below for a list of all JLab potential hazard causes and the EH&S Manual reference for assessment guidance.

Hazard Origin/Type	EH&S Manual Reference (PDF)	Additional Comments

Tools:
  Hand and Power
  Machine
	Chapter 6120
	Chapter 6121	

Welding/cutting/brazing/grinding	Chapter 6122	
Ladders & scaffolds	Chapter 6132	
Cranes use	Chapter 6140	
Hoist use	Chapter 6140	
Forklifts used in tunnel	Chapter 6145 Chapter 6146	
Aerial work platforms (ManLifts)	Chapter 6147	
Compressed gases Flammable gases	Chapter 6150 Chapter 6152	

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WCD: Electronic Copies

Documents Management System

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Documents Management System

Safety Alerts & Notices

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2002 - 2004

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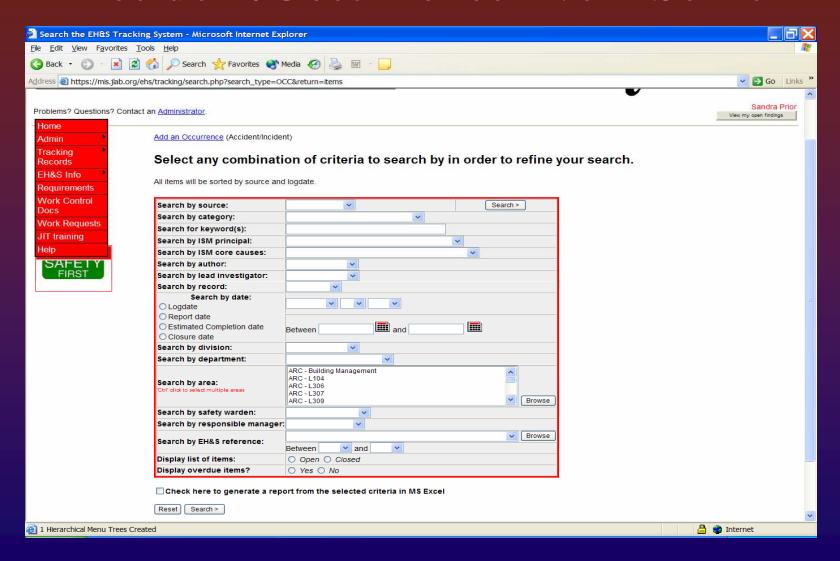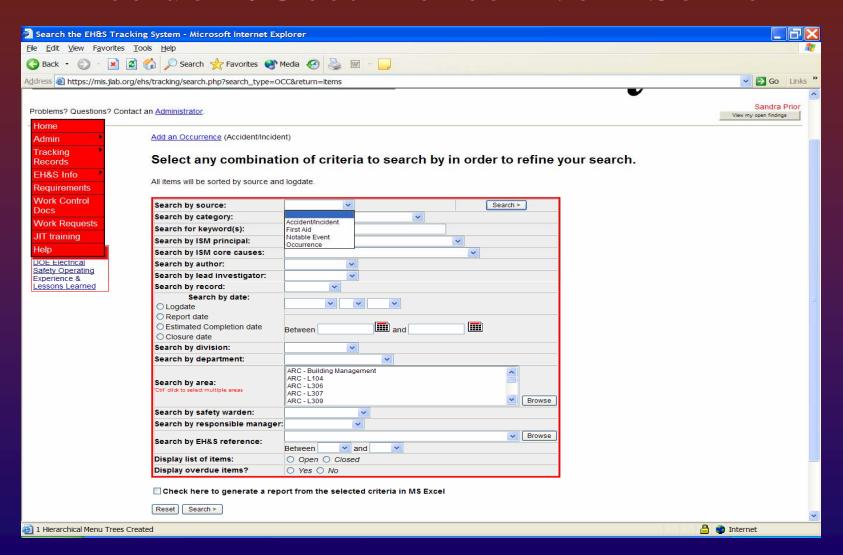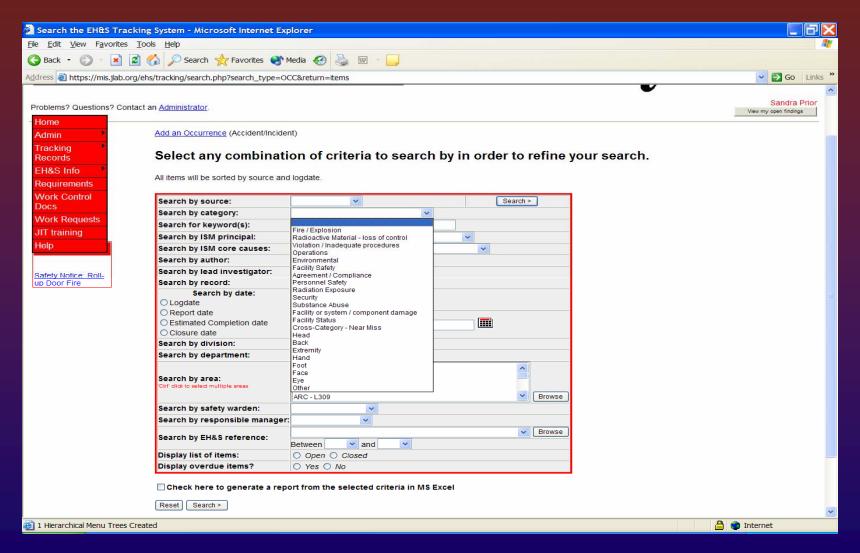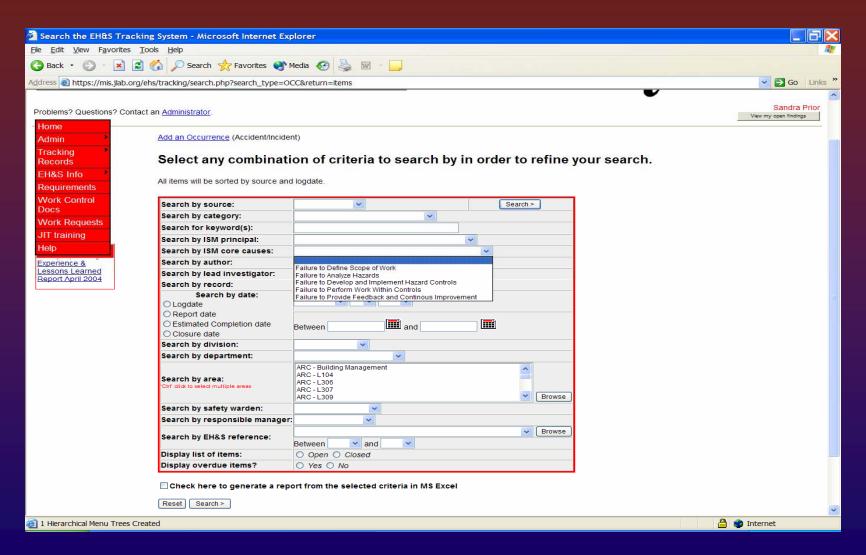# Search Function

Search By: Findings or Events

Accident/Occurrence Event Search

Accident/Occurrence Event Search

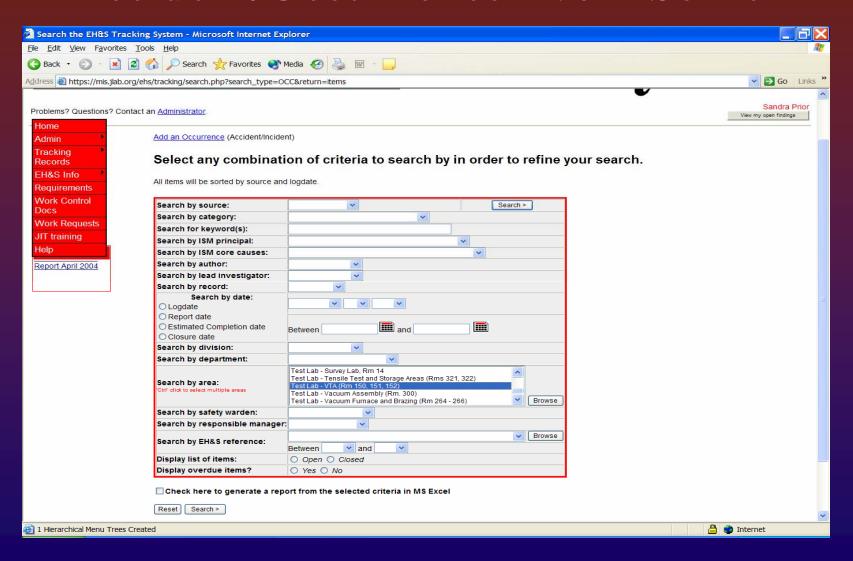# Accident/Occurrence Event Search

Accident/Occurrence Event Search

Accident/Occurrence Event Search

Search Results: Vertical Test Area

Occurrence Record: PSS Interlocks

Occurrence Record: PSS Interlocks

Findings View – As A List

Findings View – Individually

Excel Download of Search Results

Excel Download of Search Results

- Pop up box appears with field list

- User checks the fields desired in the spreadsheet

- Click on the submit button and search results open up in Excel

More….Graphs & Charts

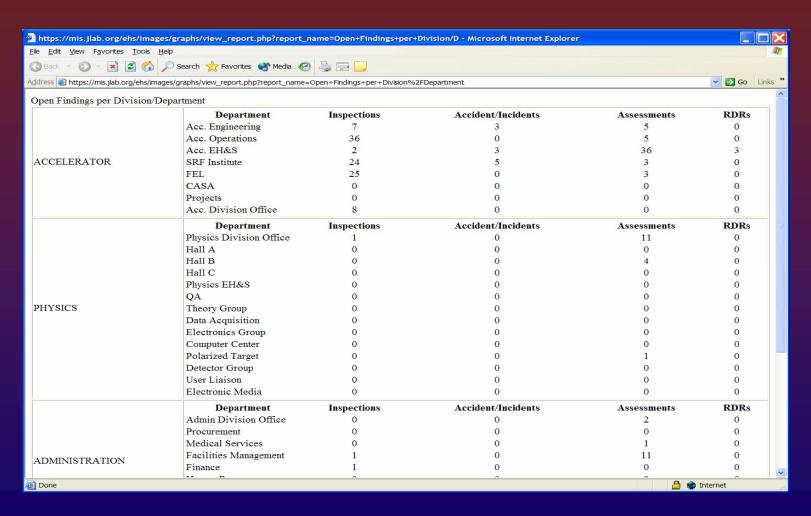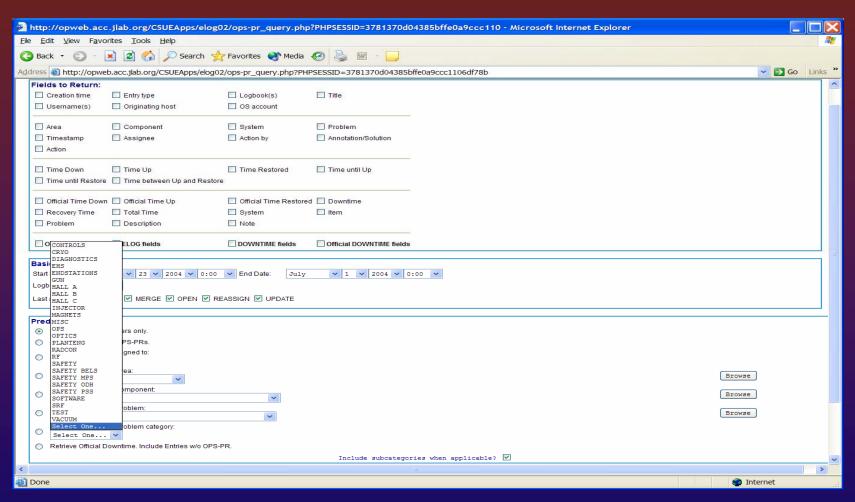# More….Graphs & Charts

Closure Stats for Inspection Items
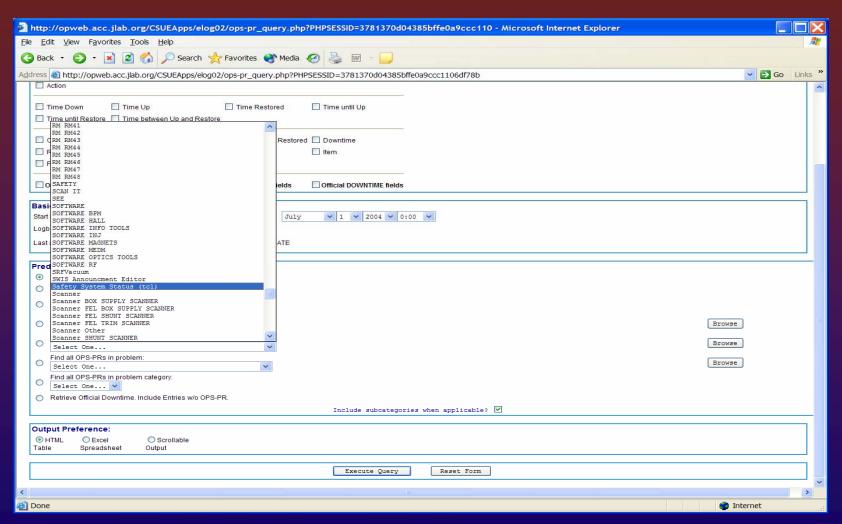
Findings Distribution by Functional Area
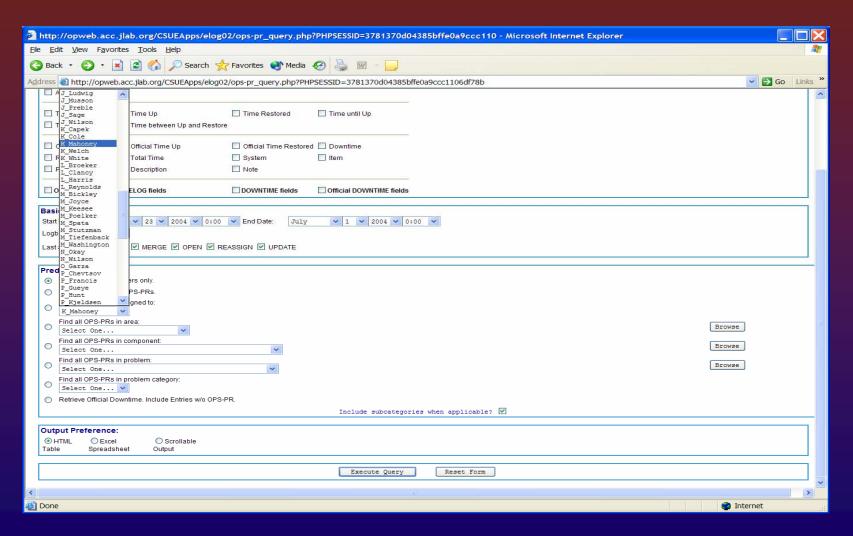
Findings Distribution Across Lab By Department

Operations Problem Reporting (OPS-PR)

Operations Problem Reporting (OPS-PR)

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Operations Problem Reporting (OPS-PR)

Safety System Group & EH&ST3 Web Pages